

many false-positive abnormalities is inherent to the statistical assumptions of normalcy for each test and has no actual clinical benefit. Repeat confirmatory and further diagnostic tests to pursue such abnormal laboratory values also contribute to the costs of such screening. Preoperative laboratory testing has been projected in one study to cost about \$4.2 million for each life lost. In an era of increasing cost-containment, such funds could be spent more efficiently to save more lives.

Similarly, the usefulness of more expensive preoperative tests, such as the electrocardiogram and chest x-ray film, to detect asymptomatic illnesses capable of affecting the surgical outcome has proved to be minimal in clinical studies of young, otherwise healthy patients. Unnecessary delays in a surgical procedure and the concomitant patient anxiety for the workup of benign diseases (for example, the asymptomatic granuloma presenting as a lung nodule) also contribute to the inadequacies of these tests. In the elderly in whom the number of diseases and their prevalence increase, chest radiographs and electrocardiograms may be more helpful.

Even when such preoperative laboratory tests are ordered, physicians fail more than half the time to note the abnormalities in the chart and to order follow-up tests.

These studies provide evidence that, in the absence of specific clinical indications, "routine" preoperative laboratory testing can be safely eliminated. Because it has been estimated that 50% of all surgical procedures in this country are done on presumably healthy persons, the potential cost savings would be enormous. It is reassuring to know that the "best test" preoperatively in minimizing surgical morbidity and mortality is still a careful history and physical examination.

LAWRENCE K. LOO, MD
Loma Linda, California

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Weight Control in Managing Hypertension

NUMEROUS EPIDEMIOLOGIC STUDIES have shown a relationship between body weight and hypertension; weight gain increases the risk of hypertension developing. The mechanisms responsible for hypertension in obese patients remain obscure. Neither increased plasma volume, cardiac output, salt intake nor altered adrenergic mechanisms are adequate explanations alone. Obesity increases the cardiovascular risk; part of this increased risk can be ascribed to its association with hypertension. An additional risk occurs because of an increased cardiac output. Both hypertension and an increased stroke volume can contribute to the development of left ventricular hypertrophy and left ventricular failure. Weight loss in both moderately obese and morbidly obese persons will result in a significant reduction of blood pressure and the regression of left ventricular mass.

A lowered blood pressure occurs both in patients who have not received medication for hypertension and those who are already receiving medication. There is no linear relationship between weight loss and blood pressure reduction. It has been suggested that there is a "floor" in the blood pressure, so

that the blood pressure will not reduce further despite continued weight loss. It is not clear at what level of weight reduction a floor in the blood pressure will be reached, but even a moderate weight reduction of 5 to 7 kg (10 to 15 lb) will produce a significant improvement in blood pressure control. This degree of weight loss will be more easily achieved than will a return to an ideal body weight. As many as 39% of hypertensive patients can remain normotensive for as long as four years without medication if a weight loss of 5 kg or more is coupled with reduced salt and alcohol intake.

The control of obesity is an important variable in managing patients with hypertension. Physicians should attempt to motivate their patients to lose weight if they are obese. If they succeed, better blood pressure control with fewer anti-hypertensive drugs should be the result.

KENNETH A. CONRAD, MD
JOANNE R. CONRAD, RD, MS
TIMOTHY C. FAGAN, MD
Tucson

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Relaxation Therapy for Hypertension

THE WORD "HYPERTENSION" to most patients implies a condition related to increased stress that by some mechanism results in an elevation of the arterial pressure. Although the role of stress as an etiologic factor in the development of hypertension remains a controversial issue, the effective application of relaxation therapy in managing hypertension is becoming clearer. In recent years nondrug therapies have been increasingly advocated in the initial management of mild hypertension, especially when the diastolic blood pressure remains in the range of 90 to 94 mm of mercury. Furthermore, nonpharmacologic approaches are a useful adjunct in treating moderate or severe hypertension and lead to the use of fewer medications in lower doses. Even though the morbid outcomes from untreated hypertension have not been shown to be lowered by the use of nonpharmacologic therapy, these interventions are generally accepted on the basis that they are not associated with significant risks or side effects.

There are more than 60 published studies on the use of transcendental meditation, yoga, several biofeedback techniques and teaching muscular relaxation in the therapy for hypertension. Most studies have shown a small but statistically significant reduction in systolic and diastolic blood pressures in the range of 2 to 10 mm of mercury, but several have shown only transient effects. The lack of carefully controlled studies using random assignment and blinded measurements and the absence of follow-up beyond eight months in most studies raise serious concerns about the effectiveness of these techniques in a clinical setting.

The first long-term follow-up study of relaxation therapy for mild hypertension was recently published in the *British Medical Journal*. In the original study, 204 patients with newly recognized untreated hypertension were randomly assigned to a relaxation program or a control group with fol-